UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,740	06/18/2001	John G. McDonough	TI-31695	1761

				EXAMINER
23494	7590	08/10/2005		WARE, CICELY Q

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ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/883,740	MCDONOUGH ET AL.
	Examiner	Art Unit
	Cicely Ware	2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *27-44* is/are allowed.

6)☒ Claim(s) *1-5 and 16* is/are rejected.

7)☒ Claim(s) *6-15, 17-26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 June 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *1*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because:

    a. Fig. 3a and Fig. 3b, contain hand-written labels.

Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

    a. Pg. 6, line 5, applicant uses the phrase "approaches to maximizes the sleep". Examiner suggests using "approaches to maximize the sleep" for clarification purposes.

    b. Pg. 6, lines 23, applicant uses the phrase "the product of the number sleep clock periods". Examiner suggests using "the product of the number of sleep clock periods" for clarification purposes.

Appropriate correction is required.

3.   The specification has not been checked to the extent necessary to determine the

presence of all possible minor errors. Applicant's cooperation is requested in correcting

any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1-4, 5, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by

Storm et al. (US Patent 6,016,312).

        (1) With regard to claim 1, Storm et al. discloses in direct sequence spread

spectrum (DSSS) communications, a method for recovering system timing, the method

comprising (col. 1, lines 39-41, col. 3, lines 13-14, 25-26): estimating a sleep clock

frequency (col. 5, lines 29-33); disabling a reference clock during a sleep interval (col. 5,

lines 50-53, col. 7, lines 63-67, col. 8, lines 56-61) ; following the sleep interval, enabling

the reference clock (col. 5, lines 11-25, col. 6, lines 42-47, col. 7, lines 11-13, col. 9,

lines 27-33); advancing the system timing by a ratio, where the ratio is the reference

clock frequency divided by the sleep clock frequency (col. 6, lines 1-6); and calculating

the ratio in response to frequency drift of the sleep clock (col. 8, lines 32-35).

        (2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Storm et

al. further discloses measuring a reacquisition error; and wherein calculating the ratio

includes calculating the ratio in response to the reacquisition error (col. 1, lines 51-59, col. 8, lines 33-35, col. 9, lines 52-58).

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 2. Storm et al. further discloses determining the frequency drift of the sleep clock (col. 5, lines 29-34).

(4) With regard to claim 4, claim 4 inherits all the limitations of claim 3. Storm et al. further discloses prior to disabling the reference clock, determining the number of sleep clock periods in the sleep interval; and wherein disabling reference clock during the sleep interval includes disabling the reference clock for the determined number of sleep clock periods (col. 7, lines 11-13, 40-45, 63-67, col. 8, line 1).

(5) With regard to claim 5, claim 5 inherits all the limitations of claim 4. Storm et al. further discloses wherein determining the number of sleep clock periods in the sleep interval includes determining the number of sleep clock periods using the ratio (col. 6, lines 30-52, col. 8, lines 32-35).

(6) With regard to claim 16, see rejection of claim 1. Storm et al. further discloses measuring sleep clock frequency using an initial ratio (col. 5, lines 26-42); and determining a ratio in response to a previous ratio and the current ratio (col. 8, lines 32-35).

Allowable Subject Matter

6.   Claims 6-15, 17-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7.   The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses in a direct sequence spread spectrum communication system a method for recovering system timing. Prior art references show similar methods but fail to teach: **"the sleep clock and reference clock have nominal frequencies; wherein determining the number of sleep clock periods in the sleep interval includes multiplying the sleep interval, times the nominal reference clock frequency, times the inverse of the ratio as follows: N.sub.sleep.sub..sub.--.sub.clk=T.sub.sleep.times.f.sub.-ref.times.(1/R)=T.sub.sleep.times.f.sub.ref.times.(f.sub.sleep'/f.sub.ref'-)"**, as in claim 6; **"wherein determining the number of sleep clock periods in the sleep interval includes rounding the number of sleep periods down to an integer value of sleep clock periods"**, as in claim 7; **"wherein advancing the system timing includes advancing the system timing by the product of the number of sleep clock periods in the sleep interval and the ratio as follows:N.sub.ref.sub..sub- .--.sub.clk.sub..sub.--.sub.adj=N.sub.sleep.sub..sub.--.sub.slk.times.R=T.-sub.sleep.times.f.sub.ref.times.(f.sub.sleep'/f.sub.ref').times.(f.sub.ref-'/f.sub.sleep')"**, as in claim 8; **"wherein advancing the system timing by the product of the number of sleep clock periods and the ratio includes rounding the product**

down", as in claim 9; "performing an initial calculation of the ratio over an

extended period of time", as in claim 10; "wherein performing an initial calculation

includes calculating the ratio by averaging the number of rising and falling edges

in a reference clock signal to determine an averaged ratio", as in claim 11;

"determining the drift of the sleep clock frequency during the sleep interval

includes approximating the sleep clock frequency drift with a linear function

including the ratio as follows:.DELTA.f.sub.sleep=(R-r.sub.0)/bwhere the r.sub.0

and b are constants", as in claim 12; "determining the drift of the sleep clock

includes adding the frequency drift during the last sleep interval to the

accumulated sleep clock frequency drift to obtain the sleep clock frequency drift

with respect to the nominal sleep clock frequency", as in claim 13; "a received PN

code sequence is accepted in the DSSS communications; wherein advancing the

system timing includes shifting the phase of the PN code sequence; and the

method further comprising: following the shifting of the phase of the PN code

sequence, reacquiring the system time using the shifted PN code sequence and

the received PN code sequence; and wherein, following the measuring of the

reacquisition error, modifying the sleep clock frequency drift determination is

modified in response to the reacquisition error", as in claim 14; "wherein

measuring the reacquisition error includes measuring the offset between the

center of a searching window and correct timing position, .delta.c; and wherein

determining the sleep clock frequency drift includes calculating the sleep clock

frequency drift during the previous sleep period T.sub.sleep with a linear

approximation of the function .DELTA.f.sub.sleep=f(.delta.c), as

follows:.DELTA.f.sub.sleep=(.delta.c-c.sub.0)/dwhere c.sub.0 and d are

constants", as in claim 15; "weighting the importance of the current ratio and

previous ratio in response to the reacquisition error", as in claim 17; "performing a

calibration measurement of the ratio over an extended period of time; and

wherein measuring the sleep clock frequency using the initial ratio includes using

the ratio measured over an extended period of time as the initial ratio", as in claim

18; "the sleep interval is provided; the method further comprising: determining

the number of sleep clock periods in the sleep interval; and wherein disabling the

reference clock frequency during the sleep interval includes disabling the

reference clock for the determined number of sleep clock periods", in claim 19;

"wherein determining the number of sleep clock periods in the sleep interval

includes determining the number of sleep clock periods using the ratio", as in

claim 20; "wherein measuring the current ratio includes averaging the number of

rising and falling edges in the reference clock frequency, to determine an

averaged ratio; and wherein measuring the current ratio includes using the

averaged ratio", as in claim 21; "the sleep clock and reference clock have nominal

frequencies; wherein determining the number of sleep clock periods in the sleep

interval includes multiplying the sleep interval times the nominal reference clock

frequency, times the inverse of the ratio as follows:N.sub.sleep.sub..sub.--

.sub.clk=T.sub.sleep.times.f.sub.-

ref.times.(1/R)=T.sub.sleep.times.f.sub.ref.times.(f.sub.sleep'/f.sub.ref'-)", as in

claim 22; **"wherein determining the number of sleep clock periods in the sleep interval includes rounding the number of sleep periods down to an integer value of sleep clock periods"**, as in claim 23; **"wherein advancing the system timing by the product of the number of sleep clock periods and the ratio includes finding the product as follows:N.sub.ref.sub..sub.--.sub.clk.sub..sub.--.-sub.adj=N.sub.sleep.sub..sub.--clk.times.R=T.sub.sleep.times.f.sub.ref.tim-es.(f.sub.sleep'/f.sub.ref').times.(f.sub.ref'/f.sub.sleep')"**, as in claim 24; **"wherein advancing the system timing by the product of the number of sleep clock periods and the ratio includes rounding the product down to an integer value"**, as in claim 25; **"wherein determining the ratio includes determining the ratio in response to a plurality of previous ratios and the current ratio"**, as in claim 26.

8.   Claims 27-44 are allowed.

9.   The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses in a direct sequence spread spectrum communication system a method for recovering system timing. Prior art references show similar methods but fail to teach: **"a controller having a third input to receive reacquisition errors"**, as in claim 27.

Conclusion

10.   The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

     a.   Callicotte et al. US Patent 5,910,944 discloses a radio telephone and

method for operating a radiotelephone in slotted paging mode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
August 5, 2005

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